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V

Related Articles

TITLE:

Golgi-derived vesicles from developing epithelial cells

bind actin filaments and possess myosin-I as a cytoplasmically oriented peripheral membrane

protein.

AUTHORS:

Fath KR; Burgess DR

AUTHOR

Department of Biological Sciences, University of

AFFILIATION:

Pittsburgh, Pennsylvania 15260.

SOURCE:

J Cell Biol 1993 Jan;120(1):117-27

CITATION IDS:

PMID: 8416982 UI: 93107174

ABSTRACT:

In the intestinal brush border, the mechanoenzyme myosin-I links the microvillus core actin filaments

with the plasma membrane. Previous

immunolocalization shows that myosin-I is associated with vesicles in mature enterocytes (Drenckhahn, D., and R. Dermietzel. 1988. J. Cell Biol. 107:1037-1048) suggesting a potential role mediating vesicle motility. We now report that myosin-I is associated with Golgiderived vesicles isolated from cells that are rapidly/assembling brush borders in intestinal crypts. Crypt

cells were isolated in hyperosmotic buffer,

homogenized, and fractionated using differential- and

equilibrium-density centrifugation. Fractions

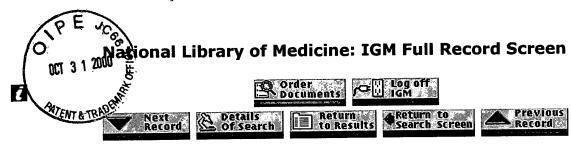
containing 50-100-nm vesicles, a similar size to those

observed in situ, were identified by EM and were shown to contain myosin-I as demonstrated by immunoblotting and immunolabel negative staining. Galactosyltransferase, a marker enzyme for trans-Golgi membranes was present in these fractions, as

was alkaline phosphatase, which is an apical

membrane targeted enzyme. Galactosyltransferase was also present in vesicles immuno-purified with antibodies to myosin-1. Villin, a marker for potential

contamination from fragmented microvilli, was



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Related Articles

External Links

TITLE:

Giantin, a novel conserved Golgi membrane protein containing a cytoplasmic domain of at least 350 kDa.

AUTHORS:

Linstedt AD; Hauri HP

AUTHOR

Department of Pharmacology, University of Basel,

AFFILIATION: Switzerland.

SOURCE:

Mol Biol Cell 1993 Jul;4(7):679-93

CITATION

PMID: 7691276 UI: 94003504

IDS:

ABSTRACT:

The Golgi complex consists of a series of stacked cisternae in most eukaryotes. Morphological studies indicate the existence of intercisternal cross-bridge structures that may mediate stacking, but their identity is unknown. We have identified a 400-kDa protein, giantin, that is localized to the Golgi complex because its staining in double immunofluorescence experiments was coincident with that of galactosyltransferase, both in untreated cells and in cells treated with agents that disrupt Golgi structure. A monoclonal antibody against giantin yielded Golgi staining in one avian and all mammalian cell types tested, indicating that giantin is a conserved protein. Giantin exhibited reduced mobility on nonreducing sodium dodecyl sulfate-polyacrylamide gel electrophoresis, was recovered? in membrane fractions after differential centrifugation or sucrose flotation, and was not released from membranes by carbonate extraction. Thus, giantin appears to be an integral component of the Golgi membrane with a disulfide-linked lumenal domain. Strikingly, the majority of the polypeptide chain is cytoplasmically disposed, because large (up t 350 kDa) proteolytic fragments of giantin could be released from intact Golgi vesicles. This feature, a large contigu us cytoplasmic domain, is present in the calcium-release channel of muscle that cross-bridges the sarcoplasmic reticulum and transverse tubule membranes.



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Related Articles

TITLE:

Purification and characterization of UDP-N-

acetylgalactosamine GM3/GD3 N-

acetylgalactosaminyltransferase from mouse liver.

AUTHORS:

Hashimoto Y; Sekine M; Iwasaki K; Suzuki A

AUTHOR

Department of Membrane Biochemistry, Tokyo AFFILIATION: Metropolitan Institute of Medical Science, Japan.

J Biol Chem 1993 Dec 5;268(34):25857-64

SOURCE: CITATION

PMID: 8245020 UI: 94064664

IDS:

ABSTRACT: A UDP-N-acetylgalactosamine: Sia alpha 2-3Gal beta 1-

> 4Glc beta 1-/Sia alpha 2-8Sia alpha 2-3Gal beta 1-4Glc beta 1-1ceramide N-acetylgalactosaminyltransferase has been purified to apparent homogeneity from mouse liver.

The purification procedure involved differential centrifugation for preparation of Golgi membranes,

extraction of the enzyme with Triton X-100, and sequential

chromatography on phosphocellulose, UDP-aldehyde adipic acid hydrazone agarose, UDP-hexanolamine-Sepharose, CM-Sepharose, and DEAE-Sepharose. At the phosphocellulose column chromatography step, the

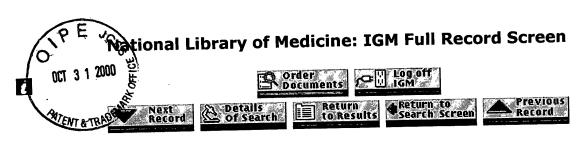
recovery of the enzyme activity was less than 25%, but it was enhanced up to 70% when the enzyme assay was performed in the presence of the flow-through fraction from the phosphocellulose column. With this assay, the

enzyme activity was found to be quantitatively recovered during all the column chromatographies, the enzyme finally being purified 171,000-fold with a specific activity of 3.6 mumol/min/mg protein. The apparent molecular

mass of the purified enzyme is 65,000 daltons. The enzyme exhibits a pH optimum f 7.5-7.9 and requires 2.5-

10 mM Mn2+ for the maximal activity. The Km value for UDP-N-acetylgalactosamine is 7 micr M. Among the

glycolipids tested as acceptor substrates, NeuGc alpha 2-



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Related Articles

External Links

TITLE:

Intracellular distribution of kinesin in chromaffin

cells.

AUTHORS:

Schmitz F; Wallis KT; Rho M; Drenckhahn D; Murphy

AUTHOR

Institute of Anatomy, University of Wurzburg,

Germany.

AFFILIATION: SOURCE:

Eur J Cell Biol 1994 Feb;63(1):77-83

CITATION IDS:

PMID: 8005108 UI: 94273675 In this paper we examined the association of the

ABSTRACT:

microtubule motor protein kinesin with organelles in chromaffin cells. Approximately 15% of kinesin was associated with membranes as determined by differential and equilibrium centrifugation on sucrose gradients. Kinesin was not enriched in a particular organelle fraction but cofractionated with a variety of organelle markers including markers for early and late endosomes, smooth and rough endoplasmic reticulum (ER) and the Golgi apparatus. Surprisingly, low amounts of kinesin were present in fractions of purified chromaffin granules. The absence of kinesin from the bulk of chromaffin granules was also

indicated by immunostaining of tissue sections. A polyclonal antibody that specifically recognized the 120 kDa kinesin heavy chain labeled predominantly a perinuclear region that is typical for most of the kinesin-binding organelles identified by cell fractionation (endosomes, Golgi, ER). Since these organelles are compartments with high membrane

turnover, we speculate that kinesin might be involved in certain aspects of trafficking of these membrane

systems.

MAIN MESH **HEADINGS:**

Chromaffin System/*chemistry Chr maffin System/*cytology



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Related Articles

External Links

TITLE:

Segregation of MHC class II molecules from MHC class I

molecules in the Golgi complex for transport to lysosomal

compartments [see comments]

AUTHORS: AUTHOR

Peters PJ; Neefjes JJ; Oorschot V; Ploegh HL; Geuze HJ Laboratory of Cell Biology, Medical School, University of

AFFILIATION: Utrecht, The Netherlands.

SOURCE:

Nature 1991 Feb 21;349(6311):669-76

CITATION IDS: PMID: 1847504 UI: 91141576

COMMENT:

Comment in: Nature 1991 Feb 21;349(6311):655-6 Comment in: Nature 1991 Jul 25;352(6333):288-9

ABSTRACT:

Traffic of MHC molecules dictates the source of peptides that are presented to T cells. The intracellular distribution

of MHC class I and class II molecules reflects the

dichotomy in presentation of antigen from endogenous

and exogenous origin, respectively. In human B

lymphoblastoid cells, class I molecules are present in compartments constituting the biosynthetic pathway, whereas class II molecules enter structures related to

lysosomes during their biosynthesis.

MAIN MESH

B-Lymphocytes/*metabolism

HEADINGS:

Histocompatibility Antigens Class I/*metabolism

HLA-D Antigens/*metabolism

ADDITIONAL

beta-N-Acetylhexosaminidase/analysis

MESH

B-Lymphocytes/secretion

HEADINGS:

Biological Transport Cell Line, Transformed Endocytosis/immunology Golgi Apparatus/metabolism

Herpesvirus 4, Human

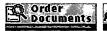
Human

HLA-D Antigens/biosynthesis

Lysosomes/chemistry



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Related Articles

External Links

TITLE:

The biosynthetic pathway of MHC class II but not class I

molecules intersects the endocytic route.

AUTHORS:

Neefjes JJ; Stollorz V; Peters PJ; Geuze HJ; Ploegh HL

AUTHOR

Department of Cellular Biology, The Netherlands Cancer

AFFILIATION: Institute, Amsterdam.

SOURCE:

Cell 1990 Apr 6;61(1):171-83

CITATION

PMID: 2156628 UI: 90199891

IDS:

ABSTRACT:

We studied the intracellular traffic and subcellular distribution of MHC class I and class II antigens in comparison with a recycling surface glycoprotein, the transferrin receptor (Tfr), in the human lymphoblastoid cell line JY. No internalization was detectable for class I molecules. Class II molecules were internalized but did not recycle. In contrast, Tfr was found to internalize and recycle. The biosynthetic pathway of class II molecules differ from that of class I molecules in that it shows a delay (1-3 hr) in transport from trans-Golgi to cell surface: here it intersects the endocytic route.

Immunoelectron microscopy using anti-MHC antibodies revealed the existence of vesicular structures that were intensely labeled for class II molecules. It is proposed that at this site combination of class II molecules with

processed antigen could occur.

MAIN MESH

*Endocytosis

HEADINGS:

*Genes, MHC Class I *Genes, MHC Class II

Histocompatibility Antigens Class I/*analysis Histocompatibility Antigens Class II/*analysis

Membrane Glycoproteins/*biosynthesis

ADDITIONAL

B-Lymphocytes

MESH

Cell Cycle

HEADINGS:

Cell Line